NOTIFICATION OF COMPLIANCE STATUS REPORT
40 CFR PART 63 SUBPART FFFF
3V INC.
OCTOBER 2008

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1. INTRODUCTION

3V Inc. is subject to the Miscellaneous Organic NESHAP 40 CFR Part 63 Subpart FFFF for organic chemical manufacturing processes in unit ID's 04, 05, 06 and 07. The facility is also subject to the Pharmaceutical MACT 40 CFR Part 63 Subpart GGG in unit ID 04. The purpose of this notification is to document the facility's status with compliance with Subpart FFFF.

The facility consists of batch chemical manufacturing process units, wastewater treatment units, storage tanks, and air pollution control equipment for the reduction of organic HAP's including: two thermal oxidizer units (68H001 and 68H002) and one vapor absorber recovery system (04C401 and 04C402). There are no continuous process sources.

The affected source includes the following MCPU's.

Table 1. Affected Source

MCPU	Chemical Manufacturing Processes
04 – Alpha/Beta/Epsilon Plant	Efram CR, Elphos ET, Extrapin, Luxus 1, Luxus 2 from Luxus 5, Luxus 5, Tabanol NA, Unox 3 and 51MT production.
05 – Gamma Plant	Tabanol 5
06 – Delta 1 Plant	Efram CR, Tabanol 1 and Tabanol 2
07 – Delta 2 Plant	Tabanol 5

2. SECTION BY SECTION REVIEW OF COMPLIANCE METHODS

63.2455 Compliance with continuous process vent provisions.
There are no continuous production processes at the facility. All products are produced from batch processes.

63.2460 Compliance with batch process vent provisions.

The facility operates a batch production facility. All products are produced from batch processes.

The following table lists the equipment used in each process, the uncontrolled HAP emissions rate and the group status for the batch process vents.

Table 2. Specific Process Equipment Used In Each Process With HAP Emissions

MCPU	Process	Equipment	HAP E., tpy	Group
04	Efram CR	02R210, 02VA210	4.35	2
04	Elphos ET	03R301, 03V313A, 02TK111, 03V380, 03R305, 03R150, 03VA305, 03SE301, 03V313B, 03V324A, 03V323, 03VA310, 03FP303, 03V322, 03V375, 03C305, 03V376, 05V575, 05C503, 05V576, 05VA534, 05C505, 05V579, 05V580	Designated[1]	1
04	Extrapin	02R102, 03VA351, 02R151, 03SE302	1.9	2
04	Luxus 1	03VA307, 03R302A, 03R305, 03SE301,	Designated	1

		03FP303, 03D301, 03R301, 05VA534, 05V579, 05C505, 05V580		
04	Luxus 2 from Luxus 5	03R302B, 03R307, 03R304, 03R306/C307	Designated	1
04	Luxus 5	03R307, 03R302B, 03FP301, 02D130, 03V358, 02VA122, 03VA305, 03FP305	Designated	1
04	Tabanol NA	02R151, 02D131, 03V375, 03C305, 03V376	Designated	1
04	Unox 3	03R308, 03R306, 05V579, 05V580, 05C505	1.0	2
04	51MT	05C504, 05V577, 05V578	Designated	1
05	Tabanol 5	04R402, 04R403, 04R406, 04D401, 04D402, 04D405, 04D406	Designated	1
06	Efram CR Tabanol 2	05R520, 05R521, 05R523, 05VA524, 05V542, 05V543, 05V563, 05R522, 05VA522, 05VA525, 05VA526	Designated	1
07	Tabanol 5	05R501, 05R502, 05R503, 05D501, 05D502, 05D503, 05V504, 05V506, 05V512	Designated	1
Note 1: Processes designated as group 1 in accordance with 63.2460(b)(5). All vents routed to either a recovery device or a control device.				

The following table lists the control options available to the facility to comply with the emission reduction requirements of Table 2 of Subpart FFFF.

Table 3. MACT Control Device Description

Device ID	Type of Device	Function	Performance Results
68H001	Ground flare	Control device	>99.9%
68H002	Thermal oxidizer	Control device	>99.9%
04C401 & 04C402	Absorber	Recovery device	>95%

The thermal oxidizer (68H002) is used to reduce emissions of non-halogenated vent streams. Ground flare (68H001) is used as a back up for malfunctions and scheduled downtime. The absorber is used to recover methylene chloride from batch process vents. A hydrocarbon absorbent is recirculated through two pack towers: 04C401 and 04C402 which are connected to the halogenated vent system in series. The methylene chloride is stripped from the hydrocarbon in a distillation column, 03C403, which is also vented to 04C401 and 04C402. The recovered methylene chloride is transferred back to storage tank 04TK411 for reuse in the Tabanol 5 process.

63.2465 Compliance with hydrogen halide and halogen HAP or HAP metals from process vents provisions.

There are no MON process vents that emit hydrogen halide and halogen HAP or HAP metals at the facility.

63.2470 Compliance with the storage tank provisions.

The facility consists of the following storage tanks by MCPU.

Table 4. Storage tanks by MCPU

MCPU	Tank ID
04 – Alpha/Beta/Epsilon Plant	02TK111, 02TK210, 02TK251, 02TK255, 02TK256, 03TK301, 03TK305b, 03TK311, 03TK338, 03TK382, 03V309, 03V310, 03V322, 03V323, 03V324A, 03V324B, 03V370, 03V432, 05TK513
05 – Gamma Plant	02TK206, 03TK361B, 04TK410, 04TK411
06 – Delta 1 Plant	02TK102, 02TK103, 02TK104, 02TK254, 05TK505, 05TK507, 05TK514, 05TK515,
07 – Delta 2 Plant	05TK501, 05TK516, 05TK519

The following table provides details to identify group status of each tank listed above.

Table 5. Storage Tank Group Status Details

Tank ID	Size, gals	Process	HAP Constituent	MTVP, mm Hg	Group Status
02TK102	20,000	Tabanol 1, Tabanol 2	Methanol	140	1
02TK103	47,000	Tabanol 1	Methanol	125	1
02TK104	19,430	Efram CR	Vinyl acetate	116	1
02TK206	5,840	Tabanol 5	Acrylic acid	3	2
02TK210	19,000	Luxus 5	Methylene chloride	463	1
02TK250	47,000	Tabanol 2	Methanol	16	2
02TK251	47,000	Luxus 1, Luxus 2 Recovery from Luxus 5	Xylene	9	2
02TK254	19,000	Tabanol 2	Methanol	97	1
02TK255	19,000	Tabanol 2	Methanol	140	1
02TK256	19,000	51MT Production	Methanol	63	1
03TK301	19,000	51MT Production	Methanol	51.8	1
03TK305b	15,000	Extrapin	Ethyl acrylate	32	2
03TK311	18,000	Unox 3	Allyl chloride	192	1
03TK338	19,800	Luxus 5	Methylene chloride	463	1
03TK361b	44,000	Tabanol 5	Acrylic acid	3	2
03TK382	19,000	Elphos ET	Methylene chloride	463	1
03V309	17,800	Elphos ET, Tabanol NA	Methanol	140	1
03V310	17,800	Elphos ET, Tabanol NA	Methanol	140	1
03V322	18,600	Elphos ET	Methanol	140	1
03V323	18,600	Elphos ET	Methylene chloride	463	1
03V324A	12,900	Luxus 1	Xylene	9	2
03V324A	12,900	Elphos ET	Methylene chloride	463	1
03V324B	12,900	Luxus 1, Luxus 2 Recovery from Luxus 5	Xylene	9	2

03V370	17,800	Luxus 1	Benzotrichloride	0.3	2
03V432	11,240	Elphos ET	Methylene chloride	463	1
04TK410	20,000	Tabanol 5	Acrylic acid	3	2
04TK411	23,300	Tabanol 5	Methylene chloride	463	1
05TK505	16,100	Tabanol 1	Methanol	117	1
05TK507	11,250	Efram CR	Acetaldehyde	463	1
05TK513	18,200	51MT Production	Methanol	140	1
05TK514	14,000	Tabanol 2	Methanol	16	2
05TK515	14,000	Tabanol 2	Methanol	16	2
05TK501	8,600	Tabanol 5	Acrylic acid	3	2
05TK516	10,400	Tabanol 5	Acrylic acid	3	2
05TK519	23,300	Tabanol 5	Methylene chloride	463	1

The following table lists the method compliance for each group 1 storage tank.

Table 6. Group 1 Storage Tank Compliance Method

Tank ID	HAP Constituent	Method of Compliance
02TK102	Methanol	Reduce HAP ≥95% by venting to 68H001/68H002
02TK103	Methanol	Reduce HAP ≥95% by venting to 68H001/68H002
02TK104	Vinyl acetate	Reduce HAP ≥95% by venting to 68H001/68H002
02TK210	Methylene chloride	Reduce HAP ≥95% by venting to 04C401/04C402
02TK254	Methanol	Reduce HAP ≥95% by venting to 68H001/68H002
02TK255	Methanol	Reduce HAP ≥95% by venting to 68H001/68H002
02TK256	Methanol	Reduce HAP ≥95% by venting to 68H001/68H002
03TK301	Methanol	Reduce HAP ≥95% by venting to 68H001/68H002
03TK311	Allyl chloride	Pressure vessel designed > 15 psig w/ no emissions
03TK338	Methylene chloride	Reduce HAP ≥95% by venting to 04C401/04C402
03TK382	Methylene chloride	Reduce HAP ≥95% by venting to 04C401/04C402
03V309	Methanol	Reduce HAP ≥95% by venting to 68H001/68H002
03V310	Methanol	Reduce HAP ≥95% by venting to 68H001/68H002
03V322	Methanol	Reduce HAP ≥95% by venting to 68H001/68H002
03V323	Methylene chloride	Reduce HAP ≥95% by venting to 04C401/04C402
03V324A	Methylene chloride	Reduce HAP ≥95% by venting to 04C401/04C402
03V432	Methylene chloride	Reduce HAP ≥95% by venting to 04C401/04C402
04TK411	Methylene chloride	Reduce HAP ≥95% by venting to 04C401/04C402
05TK505	Methanol	Reduce HAP ≥95% by venting to 68H001/68H002
05TK507	Acetaldehyde	Pressure vessel designed > 15 psig w/ no emissions
05TK513	Methanol	Reduce HAP ≥95% by venting to 68H001/68H002
05TK519	Methylene chloride	Reduce HAP ≥95% by venting to 04C401/04C402

63.2475 Compliance with transfer rack provisions. The products manufactured on site that contain a HAP are Tabanol 1 and Tabanol 2. The HAP is methanol. The table below lists the transfer racks by storage tank identification and the relevant information to determine group status. The facility does not operate any Group 1 transfer racks. Details are provided in the table below.

Table 7. Transfer rack Information

MCPU	Transfer Rack	Product	Rack wtd partial pressure, psia	Annual qty, L	Group Status
06 – Delta 1 Plant	03TK103	Tabanol 1	2.26	493,300	2
06 – Delta 1 Plant	05TK505	Tabanol 1	2.26	600,000	2
06 – Delta 1 Plant	02TK250	Tabanol 2	0.3	2,240,000	2
06 – Delta 1 Plant	05TK515	Tabanol 2	0.3	534,000	2

63.2480 Compliance with the equipment leak provisions. The facility has selected to comply with Part 63 Subpart UU for all Subpart FFFF processes at the facility. Additional information is provided Section 3(vi) and (vii) of this report.

63.2485 Compliance methods for wastewater provisions. Both Group 1 and Group 2 wastewaters are generated in the Elphos ET, Luxus 1 and Luxus 5 processes. The wastes from these processes are collected in 03V321, 03V326, 04V440, 04V441 and 05TK510. Wastewaters from these tanks are transferred to 05V584 where they are sampled after each transfer and tested to determine the concentration of partially soluble HAP and soluble HAP to determined group status. Group 1 wastewaters are then transferred to 03C303, steam stripper to reduce the concentration of HAPS below the group 1 definition. Wastewater after stripping in 03C303 are transferred to 05V586 where they are sampled again and tested to determine concentration of HAP's. Two control options are exercised with this unit. The first is the 50 ppmw concentration option of 63.138(b)(1). Any wastewaters exiting the stripper and collected in 05V586 that do not meet to 50 ppmw limit are then subjected to the "one megagram total source mass flow rate option" of 63.138(i)(2) for partially treated Group 1 wastewaters. The wastewater streams included in this option include:

- Wastewaters from the Luxus 1 process.
- Wastewaters from Luxus 2 recovered from Luxus 5 process.
- Wastewater from Luxus 5 process.
- Wastewaters from Regal 2B and its intermediates processes. Note this process is subject to 40 CFR Part 63 Subpart GGG.

Table 8. MON Wastewater Tank Compliance Information

Tank ID	Tank Volume, gal	Compliance Option for Group 1 Wastewaters
03V321	18,600	Fixed roof per 63.133(a)(1)
03V326	17,800	Fixed roof per 63.133(a)(1)
04V440	13,000	Fixed roof per 63.133(a)(1)
04V441	13,000	Fixed roof per 63.133(a)(1)
05TK510	18,600	Fixed roof per 63.133(a)(1)

05V584	17,800	Fixed roof per 63.133(a)(1)
05V586	14,100	Fixed roof per 63.133(a)(1)

63.2490 Compliance methods for heat exchange systems. The facility operates a cooling tower for cooling process equipment with heat exchangers. The facility complies with 63.104(a)(1) requiring the cooling water pressure be maintained at least 35 kPa (5 psi) above the HAP containing process side of the exchanger.

3. SPECIFIC INFORMATION REQUESTED BY 63.2520(d)(2)

i) Results of applicability determinations, emissions calculations, or analyses used to identify and quantify HAP usage or emissions from affected source.

Results of applicability determinations. The facility is a major source for Hazardous Air Pollutants and manufactures organic chemicals in SIC 286. As a result the facility is subject to Subpart FFFF. A list of MCPU's and processes has been provided in the introductory section of this NOCS report.

On May 30, 2008 the US EPA responded to an applicability determination submitted by the facility on April 17, 2008 requesting the use of a condenser as a recovery device for compliance with the batch process vent emission reduction provisions of the regulations. The EPA denied that request for the reasons stated therein. The facility had requested to replace an existing absorber used as a recovery device with a more efficient condenser. The facility has chosen to comply with the group 1 batch process vent emission reduction requirements with the existing absorber unit and has abandoned its plans to purchase and replace the absorber with a condenser and is studying a method to eliminate the HAP from its processes.

The US EPA issued a letter to the facility on February 17, 2007 in response to a request for an alternative monitoring method on a hydrogen chloride vent stream scrubber that was made in a Precompliance Report submitted by the facility on November 8, 2007. During that period, the facility was producing Luxus 5 by a process which generated hydrogen chloride gas as a reaction byproduct. That process has since been modified to eliminate the reaction causing the hydrogen chloride gas byproduct stream. Since there are no other Subpart FFFF processes that generate hydrogen chloride vent streams, this request becomes irrelevant.

Emission calculations or analyses used to identify or quantify HAP emissions. Results of emissions calculations necessary to determine group status for each group 2 process are provided by copy in Attachment A. All group 1 processes have been designated and calculations are not required.

(ii) The results of emissions profiles, performance tests, engineering analyses, design evaluations, flare compliance assessments, inspections and repairs, and calculations used to demonstrate initial compliance according to §§63.2455 through 63.2485. For performance tests, results must include descriptions of sampling and analysis procedures and quality assurance procedures.

Performance tests were conducted on the separate emission reduction devices to demonstrate compliance with 63.2460 and 2470 (batch process vents and storage tanks). A test was conducted on June 18, 2008 on thermal oxidizer 68H002. That test demonstrated that the thermal oxidizer reduced organic HAP emissions by 99.986%. The emissions profiles used to plan the test are

provided in Attachment B. A copy of the performance test report for this device is provided in Attachment C. A test was conducted on September 18, 2008 on the C401 and C402 absorber system. That test demonstrated that the C401 and C402 absorber system reduced organic HAP emissions by 95.5 %. A copy of the performance test report for this device is provided in Attachment D.

A performance test was conducted on the ground flare 68H001 on August 12, 2003. The report was submitted on November 25, 2003 in the NOCS report for the Regal 2B process.

A design evaluation for the steam stripper 03C303 has been conducted. The design evaluation is provided in Attachment E. The residuals from the steam stripper are routed to 03V369 for eventual treatment offsite in a RCRA permitted combustion device. Alternatively, during Elphos ET production campaigns, the residuals are recycled to 03V432 for reuse in the Elphos ET process.

(iii) Descriptions of monitoring devices, monitoring frequencies, and the operating limits established during the initial compliance demonstrations, including data and calculations to support the levels you establish.

The following table lists the monitoring devices and limits established during the performance tests for the thermal oxidizer, 68H002, and the C401 and C402 absorber system.

Table 9. Parametric Monitoring Required for Control Devices

Device	Paramater	Basis For Parameter	Limit	Basis for Limit
68H002	Combustion Temperature	63.988(c)(1)	1476 °F	Average temperature from test
C401 & C402	Absorbent temperature	63.991(c)(1)	65 °F	Average temperature from test
	Absorbent specific gravity	63.991(c)(1)	0.79 su	Average specific gravity from test

(v) All operating scenarios.

All operating scenarios for the processes listed in Table 2 are listed in Attachment F.

(vi) Identification of parts of the affected source subject to overlapping requirements described in §63.2535 and the authority under which you will comply.

Table 10. Identification of Parts of Source Subject to Overlapping Requirements.

Overlapping Requirements	Process	Authority under which facility will comply
63.1256 & 63.2485	All wastewaters from Regal 2B & its intermediates processes	63.2485

(vii) The information specified in §63.1039(a)(1) through (3) for each process subject to the work practice standards for equipment leaks in Table 6 to this subpart.
See Attachment G for the information required. There are no units subject to the alternative work practice standard of 63.1037 at the facility.

(viii) Identify storage tanks for which you are complying with the vapor balancing alternative in §63.2470(e).

There are no storage tanks at the facility for which the facility uses the vapor balancing alternative for the requirements of 63.2470.

(ix) Records as specified in §63.2535(l)(1) through (3) of process units used to create a PUG and calculations of the initial primary product of the PUG.

No PUG's created for this facility.

ATTACHMENT E
Design Evaluation For Steam Stripper 03C303

Process simulation software was used to confirm that the methylene chloride concentration in the wastewater stream will be reduced below 50 ppmw in accordance with 63.138(b)(1). It will no longer be a Group 1 wastewater at this concentration. Attached is a printout of the simulation showing the process streams to and from the stripper as well as the methylene chloride concentration in each stream.

Condenser 04E405 has been rated to determine if it is designed to condense all of the solvent that is evaporated in the stripper as well as the steam supplied. That calculation is attached as well.

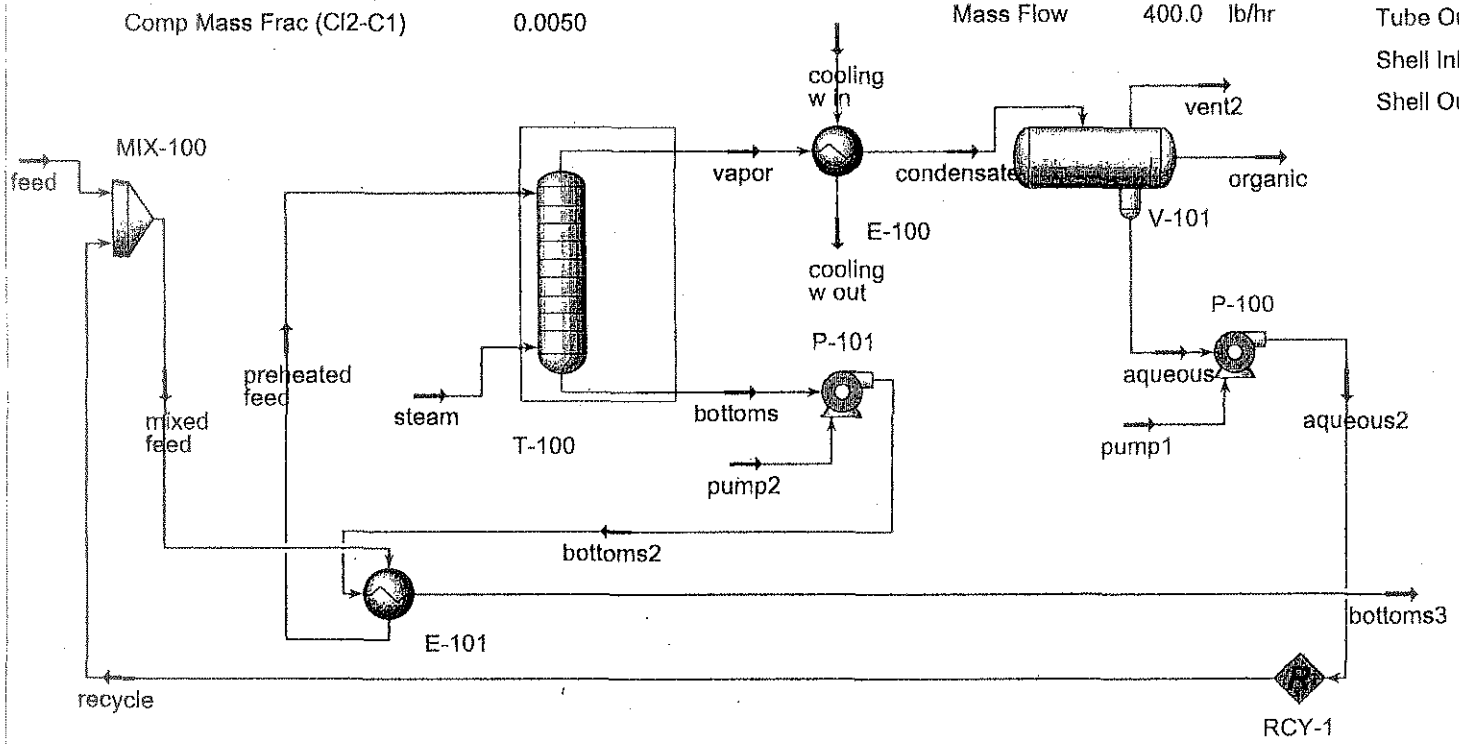
The retrofitted column meets most of the specifications for a design steam stripper in accordance with 40CFR63.138(d). The only parameter that comes into question is the requirement for 10 actual trays. 03C303 is a packed column and does not have actual trays. The number theoretical trays is expected to be at least 10. The following table provides the relevant specifications.

Parameter	**40CFR63.138(d)**	**03C303**
Minimum active column ht	5 meters	8.5 meters
Flow arrangement	countercurrent	countercurrent
Actual trays	10	Packed column – 10 theoretical
Steam to feed ratio	0.04 kg/L	0.04 kg/L
Minimum column temperature	95 °C	95 °C
Maximum liquid loading	67,100 L/hr/m2	9,331 L/hr/m2
Operating pressure	nominal atmospheric	nominal atmospheric

feed		
Temperature	70.00	F
Mass Flow	1.000e+004	lb/hr
Comp Mass Frac (H2O)	0.9950	
Comp Mass Frac (Cl2-C1)	0.0050	

steam		
Temperature	250.3	F
Pressure	30.00	psia
Mass Flow	400.0	lb/hr

E-100		
Duty	-5.471e+004	Btu/hr
Tube Inlet Temperature	200.8	F
Tube Outlet Temperature	97.00	F
Shell Inlet Temperature	85.00	F
Shell Outlet Temperature	85.61	F



organic		
Temperature	97.01	F
Mass Flow	50.24	lb/hr
Comp Mass Frac (Cl2-C1)	0.9952	
Comp Mass Frac (H2O)	0.0048	

bottoms3		
Temperature	108.3	F
Mass Flow	1.035e+004	lb/hr
Comp Mass Frac (H2O)	0.999999	
Comp Mass Frac (Cl2-C1)	1.222e-08	

E405 Condenser rating

duty=	54,710	btu/hr
area=	1264	ft2
LMTD=	45.6	deg F
Ud req'd=	0.9	btu/hr/ft2
typical Ud=	200	btu/hr/ft2